6. (a) \[5x - 3y = 9 \]
\[-5x\]
\[
\frac{-3y}{-3} = \frac{9 - 5x}{-3}
\]
\[y = \frac{5}{3}x - \frac{3}{5} \quad y \text{ intercept}
\]
\[\rightarrow \text{slope}
\]

6. (b) \[-3x - 2y = 4 \]
\[+3x \]
\[
\frac{-2y}{-2} = \frac{4 + 3x}{-2}
\]
\[y = -2 - \frac{3}{2}x
\]
7. (a) \[2\] \[z - 3y = 1 \quad l_1\]
\[3x + y = 4 \quad l_2\]

\[l_1 \implies \frac{x - 3y}{-x} = 1\]
\[\implies \frac{-2y}{-3} = \frac{1-x}{-3}\]
\[\implies y = \frac{1}{3}x - \frac{1}{3}\] \[\text{Slope} = \frac{1}{3} = m_1\]

\[l_2 \implies \frac{3x + y}{-x} = 4\]
\[\implies y = 4 - 3x\] \[\text{Slope} = -3 = m_2\]

\[m_1 \cdot m_2 = \frac{1}{3} (-3) = -1\] \[\therefore l_1 \parallel l_2 \text{ if } m_1 = m_2\]
\[l_1 \perp l_2 \text{ if } m_1 \cdot \frac{1}{m_2} = -1\]

so, the lines are perpendicular.
7. \( \begin{align*}
    x - 2y &= 8 \implies L_1 \\
    2x + 4y &= 8 \implies L_2
    \end{align*} \)

\[ L_1 \implies x - 2y = 8 -x \]
\[ \implies -2y = 8 - \frac{x}{2} \]
\[ \implies y = -4 + \frac{1}{2}x \quad \text{Slope} = \frac{1}{2} = m_1 \]

\[ L_2 \implies 2x + 4y = 8 -2x \]
\[ \implies 4y = 8 - 2x \]
\[ \implies y = 2 - \frac{1}{2}x \quad \text{Slope} = -\frac{1}{2} = m_2 \]

\[ m_1 m_2 = \left( \frac{1}{2} \right) \left( -\frac{1}{2} \right) = -\frac{1}{4} \quad m_1 \neq m_2 \]

\[ \text{neither.} \]
7. \( \text{Given: } 3x + 2y = 6 \quad \Rightarrow \quad l_1 \)

\( 6x + 4y = 8 \quad \Rightarrow \quad l_2 \)

\[ l_1 \Rightarrow 3x + 2y = 6 \\
\quad -3x \quad -3x \]

\[ \frac{2y}{2} = 6 - \frac{3x}{2} \]

\[ y = 3 - \frac{3}{2}x \quad \text{slope, } m_1 = -\frac{3}{2} \]

\[ l_2 \Rightarrow 6x + 4y = 8 \\
\quad -6x \quad -6x \]

\[ \Rightarrow 4y = 8 - 6x \]

\[ \\frac{4y}{4} = \frac{8 - 6x}{4} \]

\[ y = 2 - \frac{3}{2}x \quad \text{slope, } m_2 = -\frac{3}{2} \]

\[ m_1 = m_2 \]

so, lines are parallel.
7. (a) $\{(−2, 2), (−1, 0), (0, −2), (1, 0), (2, 3)\}$

   (a) Domain = \{-2, -1, 0, 1, 2\}

   (b) Range = \{2, 0, -2, 0, 3\}

   = \{-2, 0, 2, 3\}

   (c) 

   ![Diagram](image)

   this relation is a function.

8. $\{(−4, 3), (−2, −3), (1, 4), (3, −3), (3, 1)\}$

   (a) Domain = \{-4, -2, 1, 3\}

   (b) Range = \{-3, 1; 3, 4\}

   (c) 

   ![Diagram](image)

   not a function. becoz 3 distributed in -3 & 1
9. \( \{(1,4), (2,5), (3,5), (4,0)\} \)

(a) Domain = \( \{1, 2, 3, 4\} \)

(b) Range = \( \{0, 4, 5\} \)

(c) This relation is a function.

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\[
\begin{align*}
\text{Domain} &= [-2, 2] \\
\text{Range} &= [-2, 2] \\
\text{not a function.}
\end{align*}
\]
Domain: \([-5, 2]\)

Range: \([-2, 4]\)

\text{It's a function.}